bath is tapped out, and thereby the metal is freed from the slag in the most rational way; and it arrives free from slag in the second furnace. Here it should be freed from the remainder of the carbon content, but for this a specified amount of slag is necessary, in order that sufficient amounts of dissolved iron oxides should be at the disposal of the carbon. This quantity of slag must be thus created afresh. Since silicon, which alone admits of spontaneously producing molten iron silicate, is now no longer present in the metal, this must first be formed in the furnace from iron oxide and silica, and for this a larger supply of heat is required. In addition, with employment of very pure ore, it may occur that too little silica is present and new additions of silica be required.

The process, for which originally two furnaces were employed (of which the one was placed higher and tapped directly into the lower), was later modified, so that the furnaces lay alongside each other; the charge from the first furnace was tapped into a ladle and this then lifted up and its contents transferred to the second furnace. Nowadays the process is carried on according to Hoseh's patent in a single furnace, from which the metal is tapped after the first operation, and immediately after the removal of the slag put back again into the same furnace.

As to the working results which have been obtained by the process in modern times, H. Darby and Gr. Haddon communicated to the Iron and Steel Institute (Vol. I., p. 122, 190*5) that the production of a group of two furnaces, of which the first contained 15 tons and the finishing furnace 20 tons, amounted in five days to 908,435 kilogrammes steel, which per furnace and day amounts to 91 tons, in connection with which were required: 26*7 per cent, coal for the producers, 5*1 per cent, basic material, 8'3 per cent, lime, and 6*3 per cent, limestone, 22*3 per cent. Swedish ore, and 3*4 per cent, roll scale, against which a yield was attained of 104-02 per cent., and in another experimental series 104*5 per cent. The slag of the first furnace when employing highly phosphoric pig irons is very rich in phosphoric acid, and is therefore equally valuable if not still more valuable than basic Bessemer slag. This will be discussed later.